* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1]A network printer accounting system to which a printer characterized by comprising the following which performs a printing job on the same network, and at least one or more printing demand generators which perform a printing demand to this printer were connected, respectively.
From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A fee collection estimated calculating means which calculates an estimate of charging amount from information on a kind of use service as which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was inputted by user, and quantity of printing.
A calculation parameter acquiring means which obtains a program and a parameter which are used for this fee collection estimated calculating means.
A calculation parameter alteration means which applies a program and a parameter which came to hand by this calculation parameter acquiring means to said fee collection estimated calculating means.

[Claim 2]A transmission fee collection estimated reception means which receives an estimate of charging amount which was provided with the following, and to which said printing demand generator was transmitted by said fee collection estimated transfer means, A fee collection estimated discriminating means which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on said network from an estimate of received this charging amount, A printing demand executive instruction means to transmit an executive instruction of said printing demand which transmitted by said printing demand transmitting means to a printer which is a low charge most by this fee collection estimated discriminating means, . It is characterized by having further a printing demand rejection

command means to transmit a rejection command of execution of said printing demand to a printer which has not transmitted an executive instruction of a printing demand by said printing demand executive instruction means. A network printer accounting system to which at least one or more printing demand generators which give a printing demand on the same network to a printer which performs a printing job, and this printer were connected, respectively.

From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A service discriminating means which distinguishes a kind of service used when a print manager which performs management and calculation of fee collection to a user who inputted a printing demand performs a printing demand inputted by user, and quantity of printing.

A fee collection estimated calculating means which calculates an estimate of charging amount from information on a kind of distinguished this use service, and quantity of printing.

A calculation parameter acquiring means which obtains a program and a parameter which are used for this fee collection estimated calculating means.

A calculation parameter alteration means which applies a program and a parameter which came to hand by this calculation parameter acquiring means to said fee collection estimated calculating means, A fee collection estimated reporting means which notifies an estimate of charging amount calculated by said fee collection estimated calculating means changed by this calculation parameter alteration means to a user.

[Claim 3]A fee collection estimated reception means which receives an estimate of charging amount which was provided with the following, and as which said printer was answered by said fee collection estimated reporting means, Have further a fee collection estimated transfer means which transmits an estimate of received this charging amount to a printing demand generator which transmitted said printing demand, and said printing demand generator, A transmission fee collection estimated reception means which receives an estimate of charging amount transmitted by said fee collection estimated transfer means, A fee collection estimated discriminating means which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on said network from an estimate of received this charging amount, A printing demand executive instruction means to transmit an executive instruction of said printing demand which transmitted by said printing demand transmitting means to a printer which is a low charge most by this fee collection estimated discriminating means, . It is characterized by having further a printing demand rejection command means to transmit a rejection command of execution of said printing demand to a printer which has not transmitted an executive instruction of a printing demand by said printing demand executive instruction means. A network printer accounting system to which at least one or more printing demand generators which give a printing demand on the same network to a printer which

performs a printing job, and this printer were connected, respectively.

A printing request reception means which receives a printing demand to which said printing demand generator has a printing demand transmitting means which transmits a printing demand by a user to said printer, and said printer was transmitted from said printing demand generator.

It has a printing demand transfer means which transmits this printing demand to said print manager, From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A transmission printing request reception means which receives a printing demand to which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was transmitted by said printing demand transfer means.

A service discriminating means which distinguishes a kind of service used when performing a this printing demand which received, and quantity of printing.

A service recording device which records a kind of use service distinguished by this service discriminating means, and quantity of printing, A kind of recorded this use service, and a fee collection estimated calculating means which calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquiring means which obtains a program and a parameter which are used for this fee collection estimated calculating means, A calculation parameter alteration means which applies a program and a parameter which came to hand by this calculation parameter acquiring means to said fee collection estimated calculating means, A fee collection estimated reporting means which replies an estimate of charging amount calculated by said fee collection estimated calculating means changed by this calculation parameter alteration means to said printer which transmitted said printing demand.

[Claim 4]The network printer accounting system according to any one of claims 1 to 3, wherein said calculation parameter acquiring means obtains said program and a parameter by reading from a predetermined recording medium.

[Claim 5]The network printer accounting system according to claim 4, wherein said predetermined recording medium is constituted by removable media.

[Claim 6]The network printer accounting system according to claim 4, wherein said predetermined recording medium is constituted by a FUROPII disk.

[Claim 7]It is connected on said network, have further a calculation parameter reading means which reads a program and a parameter which are applied to said fee collection estimated calculating means, and said calculation parameter acquiring means, The network printer accounting system according to any one of claims 1 to 3 said program and a parameter which were read by this calculation parameter reading means coming to hand via this network.

[Claim 8]The network printer accounting system according to claim 7, wherein said calculation

parameter reading means is included in said printing demand generator.

[Claim 9]The network printer accounting system according to claim 7, wherein said calculation parameter reading means is included in said printer.

[Claim 10]The network printer accounting system according to any one of claims 7 to 9, wherein said calculation parameter reading means is constituted by removable media.

[Claim 11]The network printer accounting system according to any one of claims 7 to 10, wherein said calculation parameter reading means is constituted by a FUROPII disk.

[Claim 12]Said print manager registers into an own memory measure two or more printers beforehand connected on said network, The network printer accounting system according to any one of claims 1 to 11 having further a central control means which carries out central control of the estimate of charging amount computed by said fee collection estimated calculating means to two or more this printers registered.

[Claim 13]The network printer accounting system according to any one of claims 1 to 12, wherein said print manager is included in said printer.

[Claim 14]The network printer accounting system according to any one of claims 1 to 12, wherein said print manager is included in said printing demand generator.

[Claim 15]The network printer accounting system according to any one of claims 1 to 14, wherein said print manager is constituted with a program and a parameter.

[Claim 16]Said printing demand generator A kind of said service to be used, and quantity of printing, The network printer accounting system according to any one of claims 1 to 15 having further a recording device which records charging amount by a kind of service actually used with said printer, and quantity of printing.

[Claim 17]A network printer charging method to which a printer characterized by comprising the following which performs a printing job on the same network, and at least one or more printing demand generators which perform a printing demand to this printer were connected, respectively.

From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A fee collection estimated calculation process which calculates an estimate of charging amount from information on a kind of use service as which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was inputted by user, and quantity of printing.

A calculation parameter acquisition process that a program and a parameter which are used in this fee collection estimated calculation process come to hand.

A calculation parameter change process of applying a program and a parameter which came to hand in this calculation parameter acquisition process to calculation in said fee collection estimated calculation process.

[Claim 18]A transmission fee collection estimated receiving process which receives an estimate of charging amount which was provided with the following, and in which said printing demand generator was transmitted in said fee collection estimated transfer process, A fee collection estimated discrimination process which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on said network from an estimate of received this charging amount, As opposed to a printer whose calculation result in this fee collection estimated discrimination process is a low charge most, A printing demand executive instruction process of transmitting an executive instruction of said printing demand which transmitted in said printing demand transmission process, . It is characterized by having further the printing demand rejection command process of transmitting a rejection command of execution of said printing demand to a printer which has not transmitted an executive instruction of a printing demand in said printing demand executive instruction process. A network printer charging method to which at least one or more printing demand generators which give a printing demand on the same network to a printer which performs a printing job, and this printer were connected, respectively.

From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A service discrimination process which distinguishes a kind of service used when a print manager which performs management and calculation of fee collection to a user who inputted a printing demand performs a printing demand inputted by user, and quantity of printing.

A fee collection estimated calculation process which calculates an estimate of charging amount from information on a kind of distinguished this use service, and quantity of printing.

A calculation parameter acquisition process that a program and a parameter which are used in this fee collection estimated calculation process come to hand.

A calculation parameter change process of applying a program and a parameter which came to hand in this calculation parameter acquisition process to calculation in said fee collection estimated calculation process, A fee collection estimated notice process of notifying an estimate of charging amount calculated in said fee collection estimated calculation process changed in this calculation parameter change process to a user.

[Claim 19]A fee collection estimated receiving process which receives an estimate of charging amount which was provided with the following, and in which said printer was replied in said fee collection estimated notice process, Have further a fee collection estimated transfer process which transmits an estimate of received this charging amount to a printing demand generator which transmitted said printing demand, and said printing demand generator, A transmission fee collection estimated receiving process which receives an estimate of charging amount transmitted in said fee collection estimated transfer process, A fee collection estimated

discrimination process which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on said network from an estimate of received this charging amount, A printing demand executive instruction process of transmitting an executive instruction of said printing demand which transmitted according to said printing demand transmission process to a printer which is a low charge most in this fee collection estimated discrimination process, . It is characterized by having further the printing demand rejection command process of transmitting a rejection command of execution of said printing demand to a printer which has not transmitted an executive instruction of a printing demand in said printing demand executive instruction process. A network printer charging method to which at least one or more printing demand generators which give a printing demand on the same network to a printer which performs a printing job, and this printer were connected, respectively.

A printing demand receiving process which receives a printing demand to which said printing demand generator has a printing demand transmission process which transmits a printing demand by a user to said printer, and said printer was transmitted from said printing demand generator.

It has a printing demand transfer process which transmits this printing demand to said print manager, From the contents of the printing demand which it was connected on said network and said printing demand generator transmitted to said printer. A transmission printing demand receiving process which receives a printing demand to which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was transmitted in said printing demand transfer process.

A service discrimination process which distinguishes a kind of service used when performing a this printing demand which received, and quantity of printing.

A service record process of recording a kind of use service distinguished in this service discrimination process, and quantity of printing, A kind of recorded this use service, and a fee collection estimated calculation process which calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquisition process that a program and a parameter which are used in this fee collection estimated calculation process come to hand, A calculation parameter change process of applying a program and a parameter which came to hand in this calculation parameter acquisition process to said fee collection estimated calculation process, A fee collection estimated notice process of replying an estimate of charging amount calculated in said fee collection estimated calculation process changed in this calculation parameter change process to said printer which transmitted said printing demand.

[Claim 20]The network printer charging method according to any one of claims 17 to 19, wherein said calculation parameter acquisition process obtains said program and a parameter

by reading from a predetermined recording medium.

[Claim 21]The network printer charging method according to claim 20, wherein said predetermined recording medium is constituted by removable media.

[Claim 22]The network printer charging method according to claim 20, wherein said predetermined recording medium is constituted by a FUROPII disk.

[Claim 23]It is connected on said network, have further the calculation parameter reading process of reading a program and a parameter which are applied to said fee collection estimated calculation process, and said calculation parameter acquisition process, The network printer charging method according to any one of claims 17 to 19 said program and a parameter which were read by this calculation parameter reading process coming to hand via this network.

[Claim 24]The network printer charging method according to claim 23, wherein said calculation parameter reading process is included in said printing demand generator.

[Claim 25]The network printer charging method according to claim 23, wherein said calculation parameter reading process is included in said printer.

[Claim 26]The network printer charging method according to any one of claims 23 to 25, wherein said calculation parameter reading process is constituted by removable media.

[Claim 27]The network printer charging method according to any one of claims 23 to 25, wherein said calculation parameter reading process is constituted by a FUROPII disk.

[Claim 28]Said print manager registers into an own memory measure two or more printers beforehand connected on said network, The network printer charging method according to any one of claims 17 to 27 having further the central control process of carrying out central control of the estimate of charging amount computed by said fee collection estimated calculating means, to two or more this printers registered.

[Claim 29]The network printer charging method according to any one of claims 17 to 28, wherein said print manager is included in said printer.

[Claim 30]The network printer charging method according to any one of claims 17 to 28, wherein said print manager is included in said printing demand generator.

[Claim 31]The network printer charging method according to any one of claims 17 to 30, wherein said print manager is constituted with a program and a parameter.

[Claim 32]Said printing demand generator A kind of said service to be used, and quantity of printing, The network printer charging method according to any one of claims 17 to 31 having further the record process of recording charging amount by a kind of service actually used with said printer, and quantity of printing.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]Especially this invention relates to a network printer accounting system which made it possible to change a fee collection calculation method in the network printer connected to the network environment, and a method for the same about a network printer accounting system of a printer, and a method for the same.

[0002]

[Description of the Prior Art]In calculating the fee used by each user, in the network printer in conventional technology, the method of calculating charge amount was taken according to the calculation method built into each printer.

[0003]However, the printer which has spread in recent years could perform various setting out to the print mode, and became what a printing cost replaces according to this setting out.

[0004]Therefore, also in an accounting system, supply of each of this setting-out compatible system has come to be required.

[0005]There is a printing system which JP,10-20957,A indicates as conventional technology which uses this demand as an achievement plug.

[0006]It is a printer system which comprises a host connected via a network, and a printer with the printing system by this conventional technology, While a printer has a charging means which performs the family precepts according to various operational modes and performing predetermined operation according to specification of the operational mode from a host, it is characterized by replying a host charging amount.

[0007]

[Problem(s) to be Solved by the Invention]However, in the conventional technology indicated [above-mentioned], in order to operate so that the printing demand origin which chooses a printer may choose the printer of a low price more in consideration of this accounting

information, the problem that a print job will concentrate on a specific printer arises.

[0008]Therefore, in the network printer which this invention was made in view of the above-mentioned problem, and was connected to the network environment, When a print job concentrates on one printer, a print job aims at providing a network printer accounting system which can avoid concentrating on a single printer, and a method for the same by changing the fee collection calculation method in other printers.

[0009]

[Means for Solving the Problem]In order to attain this purpose, this invention the invention according to claim 1, A network printer accounting system to which at least one or more printing demand generators which give a printing demand on the same network to a printer which performs a printing job, and a printer were connected, respectively is characterized by comprising:

From the contents of the printing demand which it was connected on a network and a printing demand generator transmitted to a printer. A fee collection estimated calculating means which calculates an estimate of charging amount from information on a kind of use service as which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was inputted by user, and quantity of printing.

A calculation parameter acquiring means which obtains a program and a parameter which are used for a fee collection estimated calculating means.

A calculation parameter alteration means which applies a program and a parameter which came to hand by a calculation parameter acquiring means to a fee collection estimated calculating means.

[0010]A printer with which the invention according to claim 2 performs a printing job on the same network, In a network printer accounting system to which at least one or more printing demand generators which perform a printing demand to a printer were connected, respectively, From the contents of the printing demand which it was connected on a network and a printing demand generator transmitted to a printer. A print manager which performs management and calculation of fee collection to a user who inputted a printing demand, A service discriminating means which distinguishes a kind of service used when performing a printing demand inputted by user, and quantity of printing, A kind of distinguished use service, and a fee collection estimated calculating means which calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquiring means which obtains a program and a parameter which are used for a fee collection estimated calculating means, A calculation parameter alteration means which applies a program and a parameter which came to hand by a calculation parameter acquiring means to a fee collection estimated calculating means, Have a fee collection estimated reporting means which notifies

an estimate of charging amount calculated by fee collection estimated calculating means changed by a calculation parameter alteration means to a user, and a printing demand generator, A transmission fee collection estimated reception means which receives an estimate of charging amount transmitted by a fee collection estimated transfer means, A fee collection estimated discriminating means which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on a network from an estimate of received charging amount, A printing demand executive instruction means to transmit an executive instruction of a printing demand which transmitted by a printing demand transmitting means to a printer which is a low charge most by a fee collection estimated discriminating means, It has further a printing demand rejection command means to transmit a rejection command of execution of a printing demand to a printer which has not transmitted an executive instruction of a printing demand by a printing demand executive instruction means.

[0011]A printer with which the invention according to claim 3 performs a printing job on the same network, In a network printer accounting system connected at least one or more sets, respectively, a printing demand generator which performs a printing demand to a printer a printing demand generator, Have a printing demand transmitting means which transmits a printing demand by a user to a printer, and a printer, A printing request reception means which receives a printing demand transmitted from a printing demand generator, It has a printing demand transfer means which transmits a printing demand to a print manager, From the contents of the printing demand which it was connected on a network and a printing demand generator transmitted to a printer. A print manager which performs management and calculation of fee collection to a user who inputted a printing demand, A transmission printing request reception means which receives a printing demand transmitted by a printing demand transfer means, A service discriminating means which distinguishes a kind of service used when performing a printing demand which received, and quantity of printing, A service recording device which records a kind of use service distinguished by service discriminating means, and quantity of printing, a kind of recorded use service, and a fee collection estimated calculating means which calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquiring means which obtains a program and a parameter which are used for a fee collection estimated calculating means, A calculation parameter alteration means which applies a program and a parameter which came to hand by a calculation parameter acquiring means to a fee collection estimated calculating means, It has a fee collection estimated reporting means which replies an estimate of charging amount calculated by fee collection estimated calculating means changed by a calculation parameter alteration means to a printer which transmitted a printing demand, A fee collection estimated reception means which receives an estimate of charging amount as which a printer was answered by a fee collection estimated reporting means, Have further a fee collection

estimated transfer means which transmits an estimate of received charging amount to a printing demand generator which transmitted a printing demand, and a printing demand generator, A transmission fee collection estimated reception means which receives an estimate of charging amount transmitted by a fee collection estimated transfer means, A fee collection estimated discriminating means which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on a network from an estimate of received charging amount, A printing demand executive instruction means to transmit an executive instruction of a printing demand which transmitted by a printing demand transmitting means to a printer which is a low charge most by a fee collection estimated discriminating means, It has further a printing demand rejection command means to transmit a rejection command of execution of a printing demand to a printer which has not transmitted an executive instruction of a printing demand by a printing demand executive instruction means.

[0012]According to the invention according to claim 4, in the network printer accounting system according to any one of claims 1 to 3, a calculation parameter acquiring means obtains a program and a parameter by reading from a predetermined recording medium.

[0013]According to the invention according to claim 5, a predetermined recording medium is constituted by removable media in the network printer accounting system according to claim 4.

[0014]According to the invention according to claim 6, a predetermined recording medium is constituted by FUROPII disk in the network printer accounting system according to claim 4.

[0015]In [according to the invention according to claim 7] the network printer accounting system according to any one of claims 1 to 3, It is connected on a network, have further a calculation parameter reading means which reads a program and a parameter which are applied to a fee collection estimated calculating means, and a calculation parameter acquiring means, A program and a parameter which were read by a calculation parameter reading means come to hand via a network.

[0016]According to the invention according to claim 8, in the network printer accounting system according to claim 7, a calculation parameter reading means is included in a printing demand generator.

[0017]According to the invention according to claim 9, in the network printer accounting system according to claim 7, a calculation parameter reading means is included in a printer.

[0018]According to the invention according to claim 10, a calculation parameter reading means is constituted by removable media in the network printer accounting system according to any one of claims 7 to 9.

[0019]According to the invention according to claim 11, a calculation parameter reading means is constituted by FUROPII disk in the network printer accounting system according to any one of claims 7 to 10.

[0020]According to the invention according to claim 12, in the network printer accounting system according to any one of claims 1 to 11 a print manager, It has further a central control means which carries out central control of the estimate of charging amount which registered into an own memory measure two or more printers beforehand connected on a network, and computed them by a fee collection estimated calculating means to two or more printers registered.

[0021]According to the invention according to claim 13, in the network printer accounting system according to any one of claims 1 to 12, a print manager is included in a printer.

[0022]According to the invention according to claim 14, in the network printer accounting system according to any one of claims 1 to 12, a print manager is included in a printing demand generator.

[0023]According to the invention according to claim 15, a print manager is constituted by a program and parameter in the network printer accounting system according to any one of claims 1 to 14.

[0024]According to the invention according to claim 16, in the network printer accounting system according to any one of claims 1 to 15 a printing demand generator, It has further a recording device which records charging amount by a kind of service to be used, quantity of printing, and a kind of service actually used with a printer and quantity of printing.

[0025]Network printer charging method of this invention to which at least one or more printing demand generators which give a printing demand on the same network to a printer which performs a printing job, and a printer were connected, respectively is characterized by that the invention according to claim 17 comprises the following again.

From the contents of the printing demand which it was connected on a network and a printing demand generator transmitted to a printer. A fee collection estimated calculation process which calculates an estimate of charging amount from information on a kind of use service as which a print manager which performs management and calculation of fee collection to a user who inputted a printing demand was inputted by user, and quantity of printing.

A calculation parameter acquisition process that a program and a parameter which are used in a fee collection estimated calculation process come to hand.

A calculation parameter change process of applying a program and a parameter which came to hand in a calculation parameter acquisition process to calculation in a fee collection estimated calculation process.

[0026]A printer with which the invention according to claim 18 performs a printing job on the same network, In a network printer charging method to which at least one or more printing demand generators which perform a printing demand to a printer were connected, respectively, From the contents of the printing demand which it was connected on a network

and a printing demand generator transmitted to a printer. A print manager which performs management and calculation of fee collection to a user who inputted a printing demand, A service discrimination process which distinguishes a kind of service used when performing a printing demand inputted by user, and quantity of printing, A kind of distinguished use service, and a fee collection estimated calculation process which calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquisition process that a program and a parameter which are used in a fee collection estimated calculation process come to hand, A calculation parameter change process of applying a program and a parameter which came to hand in a calculation parameter acquisition process to calculation in a fee collection estimated calculation process, Have the fee collection estimated notice process of notifying an estimate of charging amount calculated in a fee collection estimated calculation process changed in a calculation parameter change process to a user, and a printing demand generator, A transmission fee collection estimated receiving process which receives an estimate of charging amount transmitted in a fee collection estimated transfer process, A fee collection estimated discrimination process which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on a network from an estimate of received charging amount, As opposed to a printer whose calculation result in a fee collection estimated discrimination process is a low charge most, A printing demand executive instruction process of transmitting an executive instruction of a printing demand which transmitted in a printing demand transmission process, It has further the printing demand rejection command process of transmitting a rejection command of execution of a printing demand to a printer which has not transmitted an executive instruction of a printing demand in a printing demand executive instruction process.

[0027]A printer with which the invention according to claim 19 performs a printing job on the same network, In a network printer charging method connected at least one or more sets, respectively, a printing demand generator which performs a printing demand to a printer a printing demand generator, Have a printing demand transmission process which transmits a printing demand by a user to a printer, and a printer, A printing demand receiving process which receives a printing demand transmitted from a printing demand generator, It has a printing demand transfer process which transmits a printing demand to a print manager, From the contents of the printing demand which it was connected on a network and a printing demand generator transmitted to a printer. A print manager which performs management and calculation of fee collection to a user who inputted a printing demand, A transmission printing demand receiving process which receives a printing demand transmitted in a printing demand transfer process, A service discrimination process which distinguishes a kind of service used when performing a printing demand which received, and quantity of printing, A service record process of recording a kind of use service distinguished in a service discrimination process,

and quantity of printing, a kind of recorded use service, and a fee collection estimated calculation process that calculates an estimate of charging amount from information on quantity of printing, A calculation parameter acquisition process that a program and a parameter which are used in a fee collection estimated calculation process come to hand, A calculation parameter change process of applying a program and a parameter which came to hand in a calculation parameter acquisition process to a fee collection estimated calculation process, It has the fee collection estimated notice process of replying an estimate of charging amount calculated in a fee collection estimated calculation process changed in a calculation parameter change process to a printer which transmitted a printing demand, A fee collection estimated receiving process which receives an estimate of charging amount in which a printer was replied in a fee collection estimated notice process, Have further a fee collection estimated transfer process which transmits an estimate of received charging amount to a printing demand generator which transmitted a printing demand, and a printing demand generator, A transmission fee collection estimated receiving process which receives an estimate of charging amount transmitted in a fee collection estimated transfer process, A fee collection estimated discrimination process which distinguishes whether execution of a printing job with which printer is a low charge among printers connected on a network from an estimate of received charging amount, A printing demand executive instruction process of transmitting an executive instruction of a printing demand which transmitted according to a printing demand transmission process to a printer which is a low charge most in a fee collection estimated discrimination process, It has further the printing demand rejection command process of transmitting a rejection command of execution of a printing demand to a printer which has not transmitted an executive instruction of a printing demand in a printing demand executive instruction process.

[0028]According to the invention according to claim 20, in the network printer charging method according to any one of claims 17 to 19, a calculation parameter acquisition process obtains a program and a parameter by reading from a predetermined recording medium.

[0029]According to the invention according to claim 21, a predetermined recording medium is constituted by removable media in the network printer charging method according to claim 20.

[0030]According to the invention according to claim 22, a predetermined recording medium is constituted by FUROPII disk in the network printer charging method according to claim 20.

[0031]In [according to the invention according to claim 23] the network printer charging method according to any one of claims 17 to 19, It is connected on a network, have further the calculation parameter reading process of reading a program and a parameter which are applied to a fee collection estimated calculation process, and a calculation parameter acquisition process, A program and a parameter which were read by a calculation parameter reading process come to hand via a network.

[0032]According to the invention according to claim 24, in the network printer charging method according to claim 23, a calculation parameter reading process is included in a printing demand generator.

[0033]According to the invention according to claim 25, in the network printer charging method according to claim 23, a calculation parameter reading process is included in a printer.

[0034]According to the invention according to claim 26, a calculation parameter reading process is constituted by removable media in the network printer charging method according to any one of claims 23 to 25.

[0035]According to the invention according to claim 27, a calculation parameter reading process is constituted by FUROPII disk in the network printer charging method according to any one of claims 23 to 25.

[0036]According to the invention according to claim 28, in the network printer charging method according to any one of claims 17 to 27 a print manager, It has further the central control process of carrying out central control of the estimate of charging amount which registered into an own memory measure two or more printers beforehand connected on a network, and computed them by a fee collection estimated calculating means to two or more printers registered.

[0037]According to the invention according to claim 29, in the network printer charging method according to any one of claims 17 to 28, a print manager is included in a printer.

[0038]According to the invention according to claim 30, in the network printer charging method according to any one of claims 17 to 28, a print manager is included in a printing demand generator.

[0039]According to the invention according to claim 31, a print manager is constituted by a program and parameter in the network printer charging method according to any one of claims 17 to 30.

[0040]According to the invention according to claim 32, in the network printer charging method according to any one of claims 17 to 31 a printing demand generator, It has further the record process of recording charging amount by a kind of service to be used, quantity of printing, and a kind of service actually used with a printer and quantity of printing.

[0041]

[Embodiment of the Invention]Hereafter, the composition and operation of a network printer accounting system by this invention and a method for the same are explained in detail using a drawing.

[0042](A 1st embodiment) Drawing 1 It is a block diagram showing the composition outline of the printing system which is one embodiment of this invention.

[0043]Reference of drawing 1 will constitute the network printer accounting system of this invention, and the printing system by the method with the network to which one or more sets of

printers and workstations, and print managers are connected. The print manager operates by operation and control instruction of a workstation or a printer.

[0044]A user is a computer which carries out a direct control, and a workstation assumes that it is connected by more than one into this printing system. One or more users shall share one set, and this workstation is 1 further. People's user may use two or more workstations.

[0045]the user who showed here -- a works -- the print job for being human being who operates a station, drawing up a document using a workstation, and printing the document (attached-materials 1 reference) It creates and the control which passes a printer manager a print job is inputted.

[0046]The above-mentioned print job is constituted by selection of a device, selection of paper or feeding-and-discarding Trey Kami, setting out of double-side printing, setting out of the number of copies and resolution, and the meeting of data and print data that sets up completion request time.

[0047]A printer transmits an estimated demand to a print manager based on the service and the printing amount which the user set up, and a print manager notifies the fee collection estimate according to the estimated demand which received to a printer. After the actual end of printing, a print manager receives from a printer the service and the printing amount which the user actually used, and calculates final accounting information. This final accounting information is notified to a printer, or it saves by a print manager's own inside.

[0048]A printer manager makes it operate on a workstation or a printer here by realizing only by software being also possible and equipping a workstation or a printer with this software in that case.

[0049]By the printer manager's having registered two or more printers which the printer manager who is self manages beforehand, and having registered the function of each printer, the information on performance, and the unit price of the service to provide further, By communicating with a printer via a network, a user's fee collection estimate and actual fee by use are calculated, and it provides for a user.

[0050]A printer receives from a user setting out of the paper, feeding-and-discarding paper tray and both sides which were specified by the print job, the number of copies, etc., and uses service of paper selection, a double-sided mechanism, a multiple copy creation function, etc. according to the setting out, Printing, i.e., print operation, is performed for the printing content defined by print data to media, such as paper.

[0051]The price estimated inquiry demand from the user through the terminal of a workstation etc. is received, and a fee collection estimate is provided to a user by sending to the terminal which corresponds a fee collection estimated response to this demand.

[0052]Here explains the print operation of the printing system by a 1st embodiment, and the print operation of a printer in detail using a drawing.

[0053]In the print operation of the printing system of a 1st embodiment, and the print operation of a printer, First, when a print job is published by the user, a user draws up a document using a word processor, database software, etc., and when he prints the document, he performs print job setting out to a printer. As a print job, selection of the printer connected to the network, selection of paper or feeding-and-discarding Trey Kami, setting out of double-side printing, setting out of the number of copies and resolution, specification of completion request time, etc. are included.

[0054]An estimated cheap printer is automatically chosen by sending a print job to each printer and receiving a fee collection estimate with the printing system in a 1st embodiment, here, when publishing a print job to a printer. And a print job executive instruction is sent to the selected printer, and a print job cancellation command is sent to the other printer.

[0055]Then, the printer which received the print job executive instruction performs this print job.

[0056]Hereafter, the event trace in the case of the print operation of the printing system in a 1st above-mentioned embodiment is shown using drawing 2. Drawing 2 is a sequence which shows the event trace in the case of the print operation of the printing system in a 1st embodiment.

[0057]In drawing 2, a user creates a desired document using a workstation, the scanner of a printer, etc., and inputs setting out at the time of printing a document. Based on the document and setting out which were inputted by the user, the demand of a fee collection estimate is transmitted to all the printers registered into the print manager. A printer will transmit the demand of this fee collection estimate to the fee collection estimated calculation part contained in a print manager, if the demand of a fee collection estimate is received. The fee collection estimated calculation part which received this fee collection estimated demand calculates the fee made when a print job is performed.

[0058]The printer which the fee collection estimated calculation part which calculated the fee estimated this calculation result to be a printer, transmitted as a result, and received this estimated result transmits this fee collection estimated result to the terminal of the user who did the fee collection estimated demand.

[0059]If a fee collection estimated result is received from all the printers, a terminal will choose the printer of a low charge most and will transmit a print job executive instruction anew to this selected printer. A print job cancellation command is transmitted to printers other than the selected printer.

[0060]The printer which received the print job executive instruction transmits a terminating notice to a user's terminal, after performing printing and completing printing. Use service and a printing amount are notified to the accounting management department contained in a print manager.

[0061]In an accounting management department, the information on the use service and the

printing amount which were received from the printer is stored in the memory storage specified by the storage parts store or user with whom confidence is provided.

[0062]Next, execution operation of a print job with a printer is explained in detail using the flow chart shown in drawing 3.

[0063]As an outline of execution operation here of the print job of a printer, if a printer receives a fee collection estimated demand from a user together with a print job, A demand is transmitted to a fee collection estimated calculation part, and a fee collection estimated calculation part may be realized by an external device like a printer manager connected in the case where it is built in the printer, or the network.

[0064]If drawing 3 is referred to, the printer which received the demand will judge whether the demand which received is a fee collection estimated demand in Step S301.

[0065]When it is a fee collection estimated demand (Yes of Step S301), it shifts to Step S302 and a fee collection estimated demand is transmitted to a fee collection estimated calculation part.

[0066]Next, if a calculation result is transmitted from the fee collection estimated calculation part which received the fee collection estimated demand, in Step S303, this calculation result will be received and it will transmit in Step S304 to the terminal in which a user uses this calculation result.

[0067]Then, if it stands by until the next command is transmitted from a terminal, and the next command is received from a terminal in Step S305, in Step S306, it will be judged whether this received command is a print job cancellation command.

[0068]When the received command is not a print job cancellation command (No of Step S306), it shifts to Step S307 and a print job is performed.

[0069]It transmits to the terminal in which a user uses that the print job ended the printer in Step S308 after ending the print job, then, use service and a printing amount are notified to a terminal in Step S309, and it stands by that a demand is sent from a terminal next.

[0070]In Step S301, the demand which the printer received estimates, when it is not a demand (No of Step S301), it shifts to Step S307 and a print job is performed.

[0071]In Step S306, when a print job cancellation command is received (Yes of Step S306), processing is ended and it stands by that a demand is sent from a terminal next.

[0072]Operation of a fee collection estimated calculation part is explained in detail using the flow chart of drawing 4.

[0073]If here explains the outline of operation of a fee collection estimated calculation part, a fee collection estimated calculation part analyzes a print job, deduces the service and quantity to be used, multiplies a charging rate by each, it will calculate a fee collection estimated cost by totaling all, and will perform operation which notifies a result to a printer. A printer notifies a user of the received fee collection estimated cost.

[0074]Then, if a print job executive instruction is received from a user, that print job will be performed, but if a print job cancellation command is received, that print job will be canceled and it will wait for the next printing demand.

[0075]When performing a print job, whenever a printer uses service of feeding, both sides, two or more copy copy, etc., it records the use. And after all processings of print data are completed, the service and ******** which were used by the user of the print job and the whole print job are notified to an accounting management department, and a print job is ended.

[0076]If drawing 4 is referred to, in Step S401, a fee collection estimated calculation part will analyze the job contents of the print included in this requirement signal, if a fee collection estimated demand is received.

[0077]In Step S402, a fee collection estimate is calculated for every service and every printing amount based on the analysis result calculated in Step S401.

[0078]Then, in Step S403, each fee collection estimate is totaled and this total amount is transmitted in Step S404 to the terminal which transmitted the fee collection estimated demand, and it stands by until it next receives a fee collection estimated demand.

[0079]Operation of an accounting management department is explained in detail using the flow chart of drawing 5.

[0080]Here, an accounting management department is an external device in a 1st embodiment, stores accounting information and performs demand processing etc. An accounting management department can be realized by an external device like a printer manager which was built in the printer or was connected in the network.

[0081]If the service and the printing amount for which an accounting management department will be used by the user if drawing 5 is referred to are received, it stores in the storage parts store which comprised RAM etc. which self equips with this received information in Step S501.

[0082]Next, in Step S502, charge amount is calculated for every use service based on the stored information.

[0083]If charge amount is calculated for every use service, in Step S503, this calculation result is stored in an own storage parts store, and it will stand by until it receives the next demand after that.

[0084]It makes it possible to provide this invention corresponding to the operating condition of the printer in a network by changing a calculation program for the calculation method in the fee collection estimated calculation part shown by (a 2nd embodiment), next a 1st embodiment of the above.

[0085]Hereafter, operation of calculation method change is explained in detail using the flow chart of drawing 6.

[0086]Here, the main operation in change of the calculation method of a fee collection estimated calculation part is explained. In change of a calculation method, a fee collection

estimated calculation part is realized by receiving the changing instruction of a fee collection estimated calculation method via the removable media and network which were connected. It is also possible to realize by reading the software and the module which calculate from a removable media, or changing the parameter of a calculation program using a console.

[0087]When the fee collection estimated calculation part is built in the printer, it is that a user selects a "renewal of calculation method" menu with a navigational panel, and it is also possible to take the embodiment which loads a calculation program from a floppy (registered trademark) disk. When the printer is connected to the network, it is also possible to take the embodiment of sending in the data of a calculation program with a calculation method updating instruction, from an external device.

[0088]When realizing by the printer manager, it is possible by selecting a "renewal of calculation method" menu by a console to take the embodiment which loads a calculation program from a floppy disk. In this gestalt, it is also possible to take the embodiment changed in inputting the parameter of a calculation program from a console.

[0089]If drawing 6 is referred to, when starting renewal of a calculation program in a print manager, in Step S601, it asks a user first whether change a calculation program (suppose that a calculation parameter is also included) by panel operation.

[0090]When not changing a calculation parameter by panel operation in Step S601 (No of Step S601), a substitutional calculation program is executed by carrying out G reception of the calculation module via a network. When performing change by panel operation (Yes of Step S601), in Step S602, it asks a user whether change the calculation parameter in a calculation program.

[0091]When performing change of a calculation parameter (Yes of Step S602), a change menu is shown to a user and change of a calculation parameter is made to input. In Step S602, when not changing a calculation parameter (No of Step S602), in Step S603, it asks a user whether execute a substitutional calculation program by reading a calculation module.

[0092]Here, when not reading a calculation module (No of Step S603), it shifts to Step S601. When reading a calculation module (Yes of Step S603), a calculation module is read from a floppy disk.

[0093]After passing through the above process, in Step S605, various change is become final and conclusive and the change processing of a calculation program is ended.

[0094]Thereby, to a case so that a printing demand may concentrate on one set of a printer, by changing a calculation program (and calculation parameter), an accounting system is changed and it makes it possible to prevent overconcentration of a printing demand.

[0095](One embodiment of print job data) By giving an example explains to details one embodiment of print job data which performs inter exchange to below in a printer, a print manager, and a terminal in this invention.

[0096](Example of a print job)
Suppose that print-job-data job-name#requested-device is optional, and choosing by a user is possible. However, when not optional, a print manager chooses a device.
requested-device Printer-A#input-tray: Don't specify a paper feed tray in this example.
duplex : don't specify a paper feed tray in this example.
copy-count shall carry out the number of copies, and shall offer it. Here, the copy of three copies is specified.
copy-count 3#resolution specifies the resolution of a device. (A unit is dpi)
resolution 800#print-quality specifies printing quality. There are high, medium, and low in a value.
print-quality high#job-completed-by specifies the time which a job should end.
job-completed-by 18:00 GMT#conptent-octet-count shows the byte of printing data.
count-octet-count 12345#content-type shows the format of printing data. There are Postscript and PCL 5, PCL 6, etc.
content-type application/Postscript#content-transfer-encoding shows the encoding method of data. There are base64, uuencode, etc.
content-transfer-encoding base64#content-data shows that print data begin from the following line.
Continue print data until the null line occurs.
content-
dataLSIJFLSIBHLISJELFKJHLSIHDBLISEJLGIH<DKJCLISEUHGKSUEHVXZSLEIBHLSIEJFL
It is abbreviation
>LSIJFLSIBHLISJELFKJHLSIHDBLISELSIJFLSIBHLISJELFKJHLSIHDBLISLEIBHLSIEJFLSIJ
the middle of JS#<. GJS[0097]Therefore, by transmitting and receiving the data which has the above gestalten between a printer, a print manager, and a workstation, A fee collection estimate is enabled in the print job for which a user asks, and it becomes possible further by changing a calculation parameter in fee collection calculation if needed to provide a network printer accounting system which can change a calculation method, and a method for the same.

[0098]
[Effect of the Invention]As mentioned above, according to a network printer accounting system by this invention, and a method for the same, as explained, it becomes possible to change the charging rate, calculation method, and calculation parameter in an accounting system in each printer if needed so that a printing executive instruction may not concentrate on one set of a printer.
[0099]It becomes possible by constituting the means for [above-mentioned] changing via a network to perform the above-mentioned change from a remote place.

[0100]It becomes possible by realizing the accounting system in two or more printers by one print manager to carry out central control of the charging rate, calculation method, and calculation parameter in each printer.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a block diagram showing the composition outline of the printing system which is one embodiment of this invention.

[Drawing 2]It is a sequence which shows the event trace in the case of the print operation of the printing system in a 1st embodiment.

[Drawing 3]It is a flow chart which shows execution operation of a print job with the printer in a 1st embodiment.

[Drawing 4]It is a flow chart which shows operation of the fee collection estimated calculation part in a 1st embodiment.

[Drawing 5]It is a flow chart which shows operation of the accounting management department in a 1st embodiment.

[Drawing 6]It is a flow chart which shows operation of the calculation method change in a 2nd embodiment.

[Description of Notations]

100 Network

110-140 Workstation

111-131 User

150 Print manager
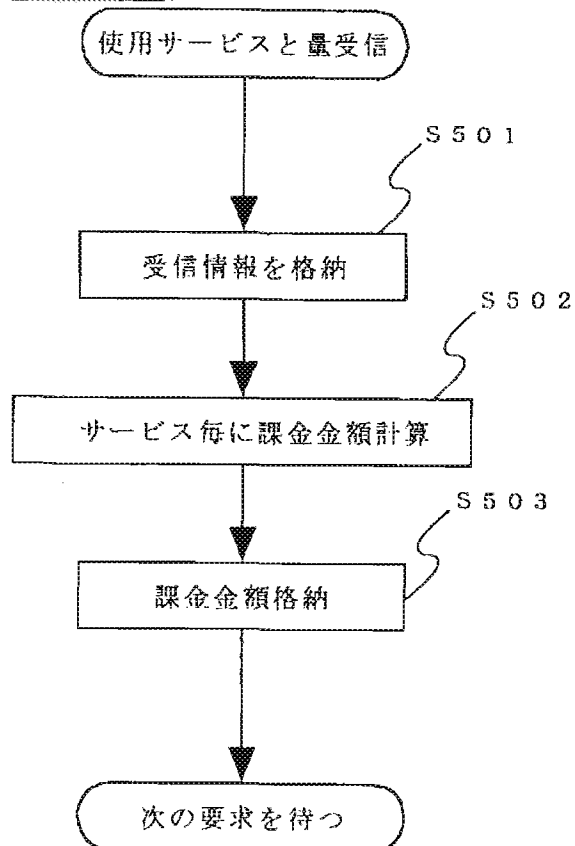
160-180 Printer

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

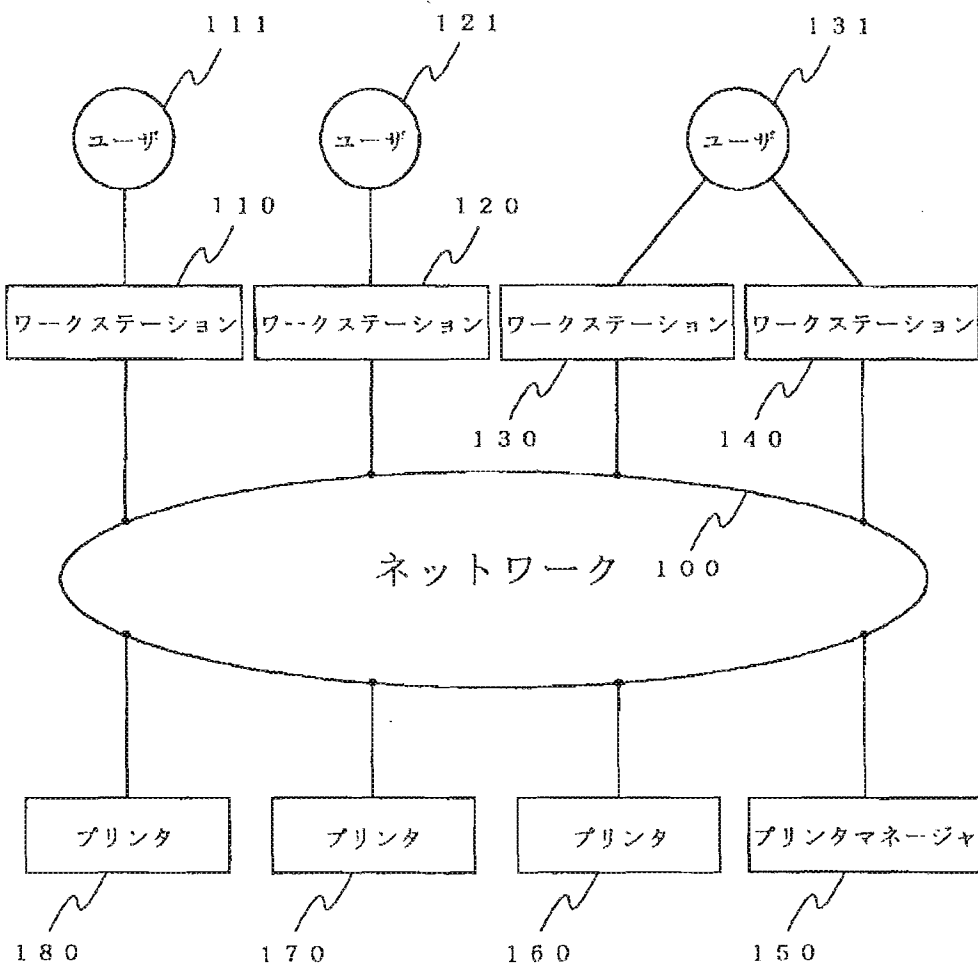3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 5]

使用サービスと量受信

S501

受信情報を格納

S502

サービス毎に課金金額計算

S503

課金金額格納
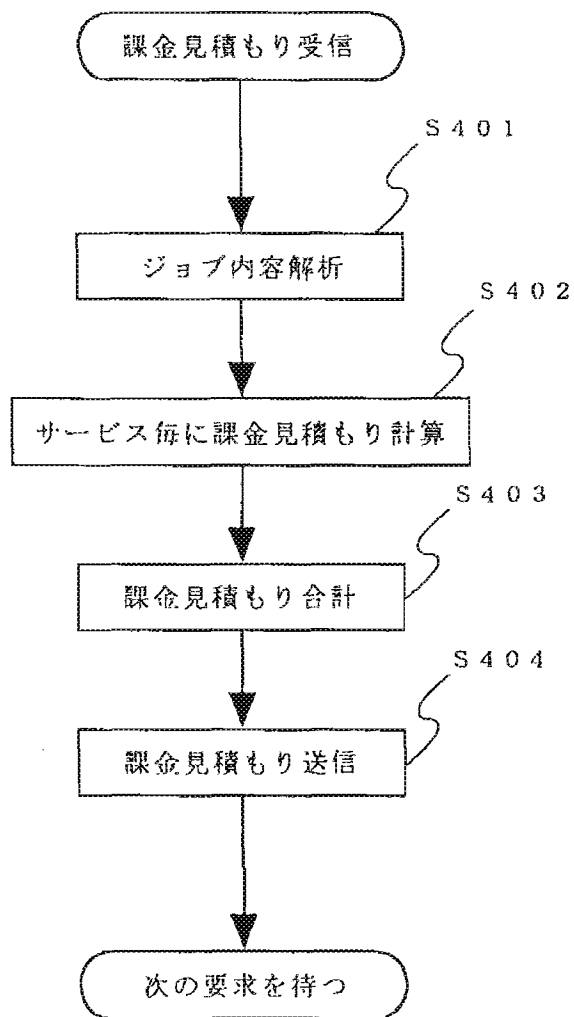
次の要求を待つ

[Drawing 1]

[Drawing 2]

ユーザ　　　　　　プリンタ　　　課金見積もり計算部　　課金管理部

ドキュメント作成

ジョブ作成　　　　　　　　　　　　　見積もり計算

課金見積もり要求　　課金見積もり要求（転送）

見積もり通知（転送）　　見積もり通知

プリンタ選択

ジョブキャンセル命令　　キャンセル

ジョブ実行命令　　　　実行通知

終了通知　　　　　使用サービスと使用量通知

情報格納

[Drawing 3]

[Drawing 4]

```
       ┌─────────────────────┐
       (   課金見積もり受信   )
       └─────────────────────┘
                 │        ＳＪＯＪ１
                 ▼
       ┌─────────────────────┐
       │    ジョブ内容解析    │
       └─────────────────────┘
                 │        Ｓ４０２
                 ▼
     ┌──────────────────────────┐
     │ サービス毎に課金見積もり計算 │
     └──────────────────────────┘
                 │        Ｓ４０３
                 ▼
       ┌─────────────────────┐
       │   課金見積もり合計   │
       └─────────────────────┘
                 │        Ｓ４０４
                 ▼
       ┌─────────────────────┐
       │   課金見積もり送信   │
       └─────────────────────┘
                 │
                 ▼
       ┌─────────────────────┐
       (    次の要求を待つ    )
       └─────────────────────┘
```
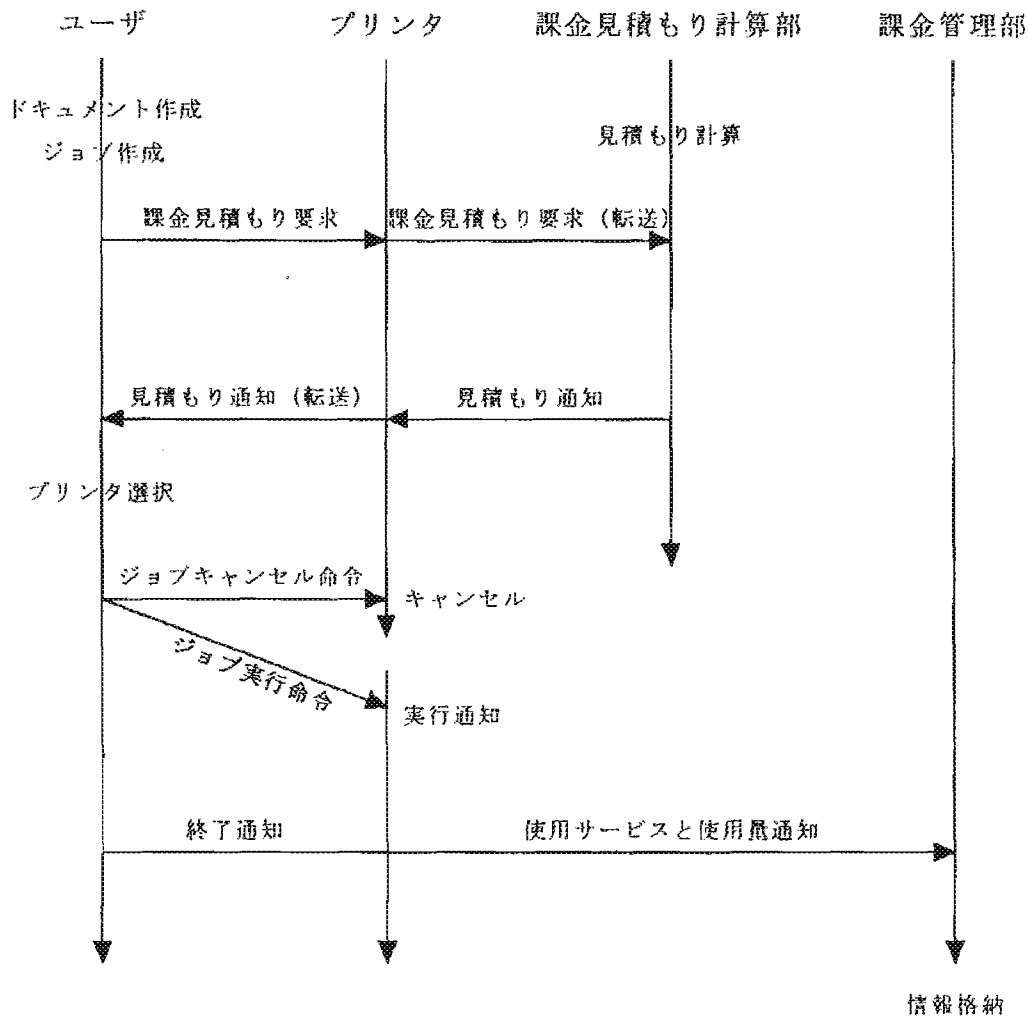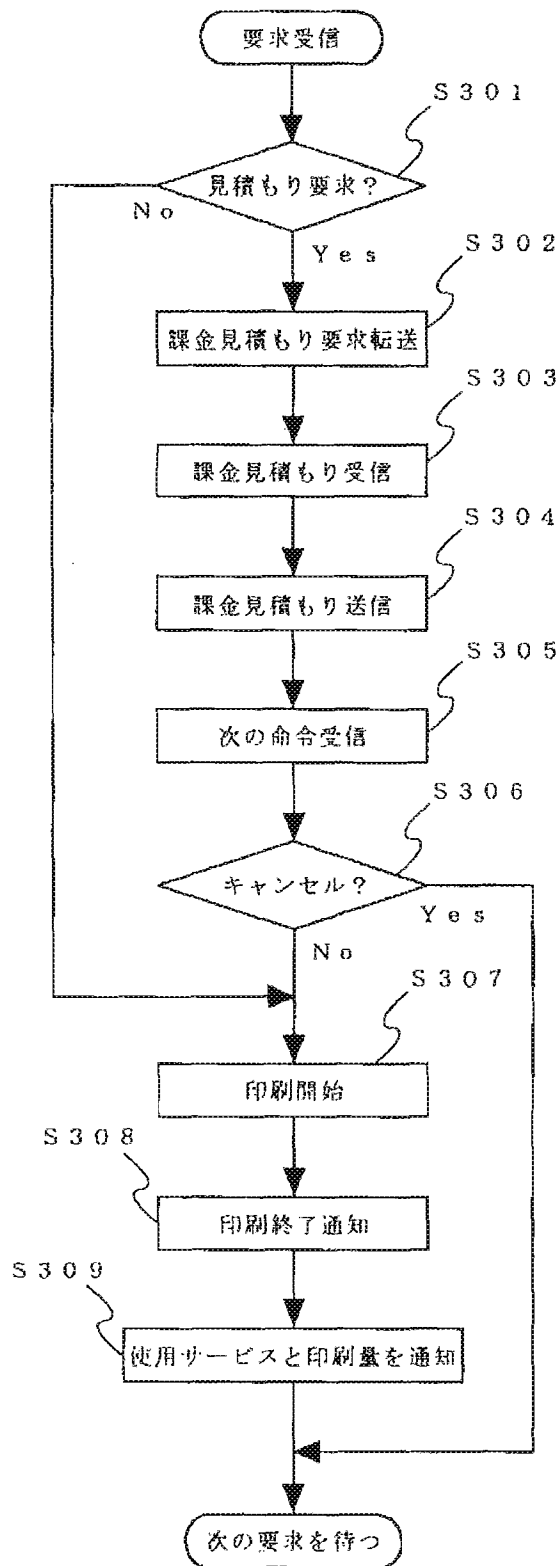
[Drawing 6]

[Translation done.]